

KIDNEY DISEASE AND INSANITY.*

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The general opinion among writers has been that kidney disease is rarely an important factor in the causation of insanity. Griesinger says† “Bright’s disease, to which any etiological relation to insanity could be attributed, is very rare in the insane.” Bucknill and Tuke‡ would expect, as a matter of theory, that Bright’s disease might cause insanity, but they have not observed it. Savage§ reports a case, and in conclusion asks: “Was the insanity due to the kidney disease primarily?” Clouston,|| however, describes the insanity of Bright’s disease as mania of a delirious kind, with extreme restlessness, delusions and absolute want of fear of jumping through windows, or other such actions, with remissions when the patient is quiet and rational.

When it is considered how many people die from some form of renal disease, and how few of them present any symptoms that would warrant a diagnosis of insanity, we should be careful in giving it much importance as a cause. It is probable, however, that there are those whose mental condition is in a state of so unstable equilibrium that the exhaustion from such a disease, and the poisonous effects of the retained products of retrograde metamorphosis of tissue, are sufficient to cause a true insanity. The following case may be an illustration:

Female—Married, thirty-five, housewife. No insanity in her family. This was her first attack. There had been signs of chronic interstitial nephritis for a long time. Mental symptoms appeared five months before admission, when she had a convulsion, followed by three days of stupor. Since then she was said to have been “weak-minded,” and had had delusions, because of the painful nature of which there had been recurring periods of violence, lasting three or four days at a time. This excitement was apparently due to fear, as she often thought friends were

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†Sydenham Society Transactions, Mental Pathology and Therapeutics, p. 197, 1867.

‡Manual of Psychological Medicine, p. 594, 1879.

§Journal Mental Science, Vol. 26, p. 245.

||Clinical Lectures on Mental Diseases, p. 596, 1883.



wrong, or to cause injury to some one, and she came to the asylum that her acts might not be followed by evil consequences; but in a day or two it was as bad as at home; everything she did was wrong.

Her delusions became more distressing. She took as little food as possible, because she "would be eating the bodies of her nearest friends." Was removed after seventeen months, while in this state of mind, to try the effect of change.

Examinations of the urine showed a sp. gr. varying from 1,012 to 1,027, a trace of albumen, a few hyaline and finely granular casts, and calcic oxalate crystals. Heart sounds normal, except for a systolic murmur heard best at the base. No oedema.

It was reported by a physician, one year later, that she had improved very much mentally, and that there was no sign of renal disease.

CASE III. Mania, with distressing delusions—Married, forty-two, housewife. No insanity in her family. Was of a very nervous temperament. Had had two previous attacks, similar to this but not as severe, from which she recovered at home. The first occurred about five years before, and lasted a week or two; the second a year before this, and lasted a month at least. She was mentally depressed for a few weeks the summer before admission. Her married life had been full of painful experiences, because of the conduct of her husband, who left her a year before, under the most distressing circumstances. It was thought that the immediate cause of the present attack was family and business trouble. After such trouble she took her bed, two weeks before admission, utterly prostrated. As in each of her other attacks she soon developed false sight and hearing; had delusions that people were setting fire to her house; that there was a conspiracy against her; that papers were signed by occupants of her house, charging her with various crimes; etc. Whatever of depression she manifested was secondary to such delusions. She became so much disturbed that she could not as before be taken care of at home, and was removed, first to a general hospital, where she remained four days. She had paroxysms of violence; was at times incoherent, frenzied and suicidal; slept only with hypnotics.

On admission to the asylum she was in a state of considerable excitement. She soon mistook the nurses for people of her

acquaintance who were acting as spies. She had quite constant false hearing—people up stairs were reading telegrams about her; there was a conspiracy to sell her house, and take all her property; “they” were about to publish an article in the newspapers, making all sorts of accusations against her; her food was poisoned; etc. She was in great distress of mind, and showed it by her restlessness, flushed face, and mouth so dry that she could scarcely articulate. Sleep was gained only with hypnotics. This condition continued for a month; after that she gradually improved, and one morning suddenly realized that she had been sick, and that the voices she had heard were not real. She was discharged recovered in two months.

Repeated examinations of the urine showed the daily quantity to vary from 30 to 50 oz., the sp. gr. from 1,012 to 1,023. There was always a slight trace of albumen, and a few hyaline, granular, and occasionally epithelial casts. There was no œdema. There was a doubtful apex systolic murmur, not transmitted; no cardiac enlargement. There has been no opportunity for urinary analysis, but five and a half years later she was apparently in good bodily health.

CASE IV. Mania, with distressing delusions—Married, thirty, housewife. A maternal cousin was temporarily insane. She was naturally very nervous, and liable to faint from slight causes. She had borne four children, the youngest four and a half months before admission. All the labors were normal, and no mental trouble had followed the others. On retrospect, her friends thought she had been at times “peculiar” since the death of a child, two years before. She made statements about her children and the neighbors that were highly improbable. Her delusions about the neighbors were those of persecution of herself and her family. Nothing attracted much attention, however, till about a month before admission, when, because of these delusions, she became excited, and had been more or less so ever since, sleeping only with the use of hypnotics. She gave the most conclusive evidence of illusions of hearing.

After admission she remained in about this condition for three and a half months,—somewhat confused, walking about from place to place, looking for the people whose voices she heard; sometimes noisy, usually not; eating when urged, but sparingly; sleeping with hypnotics; always, when awake, in a state of great

agitation and distress of mind. The pulse varied from 80 to 110, the temperature from 98° to 100° F.

Examinations of the urine showed sp. gr. 1,008 to 1,025. Urea sometimes increased and again diminished, a trace of albumen, hyaline, granular and epithelial casts, free blood and renal epithelium. There was œdema of ankles. Heart sounds were normal. In three months she began to improve in her mental condition; the œdema disappeared, and most of the casts. The mental gain was not all that could be desired, for she still had false hearing when taken, at the expiration of nine months, to an asylum in another part of the country. There was also a trace of albumen, and an occasional cast.

Fifteen months later her husband reported that she was well mentally, and that there was no evidence of renal disease.

CASE V. Simple melancholia—Married, fifty-eight, housewife. Maternal grandmother, uncle and aunt were insane. The sickness and suicide of this aunt was a great strain upon her. Her husband had been an invalid for years. When well she was a bright, active, cheerful woman, who took an interest in many things. This was her first attack of mental disease, and was of one year's duration. She had depression of spirits, decrease of the power of voluntary attention, morbid apprehension, and was suicidal. Her morbid apprehension was chiefly concerning herself. At one time she expected to be paralyzed, afterward she had dimness of vision and feared she was becoming blind. Her eyes had been twice examined by an eminent oculist, who found no organic change. Latterly she lost somewhat in self-control and talked more of suicide. Slept poorly. Bowels constipated. Some loss of flesh—weight 109 pounds. Heart and lungs apparently normal—slight œdema at night over tibiæ. Pulse, 80 to 90; temperature, normal. Urine, 12½ to 15 oz. in twenty-four hours; sp. gr. 1,020 to 1,025; urea, less than half the normal amount; a trace of albumen, and in the sediment calcic oxylate and calcic phosphate crystals, hyaline and coarsely granular casts and free renal epithelium.

The treatment was rest, massage, a liberal diet, more liquids than she had been taking, tonics and laxatives, no hypnotics, and all the moral treatment that could be brought to bear. In three and a half months she had gained about fifteen pounds in flesh, had lost all dimness of vision, and was entirely recovered

of her melancholy. The œdema had disappeared. The urine had steadily gained in quantity from $12\frac{1}{2}$ to $32\frac{1}{2}$ oz. daily; urea had increased to the normal amount; the albumen was gone; and in the last analysis only one hyaline cast was found. She is now, after nearly a year, apparently well.

Without reporting more cases at length the following table is given, which shows results of urinary analyses in two hundred cases of women—consecutive admissions. It will be observed at once that a large proportion of the whole number had albumen and casts, 27.5 per cent.; also that a still larger proportion had albumen alone (accidental albuminuria), 32 per cent. As would be expected from what has been said, cases of anxiety and distress of mind show a much larger proportion of renal symptoms than cases of ordinary mania. Melancholia and mania with distress have albumen and casts in 47.9 per cent., while ordinary mania in only 14.3 per cent. Cases of other forms of insanity are too few to make percentages of any value. Both the heat and nitric acid tests were used in each case.

SUMMARY OF THE ANALYSES OF THE URINE IN TWO HUNDRED CONSECUTIVE CASES IN THE FEMALE DEPARTMENT OF THE McLEAN ASYLUM.

DISEASE.	Total Cases.	Albumen and Casts.	Albumen, no Casts.	No Albumen, Casts.	No Albumen, no Casts.	Hyaline Casts.	Granular Casts.	Epithelial Casts.	Blood Casts.	Pus.	Renal Cells.	Blood.	Crystals, Urates, Oxalates.
Melancholia,	65	27	15	1	22	25	19	4	1	18	14	15	41
Mania with Distress,	8	8	0	0	0	8	7	3	0	1	6	3	5
Mania,	63	9	25	1	28	8	3	3	2	16	11	11	36
Dementia,	19	1	9	1	8	1	2	1	0	4	3	3	8
Delusional Insanity,	18	2	3	0	13	2	2	0	0	3	1	1	5
General Paralysis, . .	10	4	5	0	1	3	3	2	0	5	3	2	4
Neurasthenia,	10	2	4	0	4	1	2	0	0	4	2	2	5
Fixed Ideas,	3	1	1	0	1	1	1	1	0	0	0	0	3
Hypochondria,	2	0	1	0	1	0	0	0	0	1	0	0	0
Hysteria,	2	1	1	0	0	1	1	1	0	1	0	0	1
Totals,	200	55	64	3	78	50	40	15	3	53	40	37	108

It is difficult to give a satisfactory theory in explanation of the renal symptoms in this class of cases, but in the absence of other more manifest cause it is highly probable that the mental condition is primarily concerned. Patients in such a state of mind are poorly nourished as a rule, and all the bodily processes

are on a low plane, as is indicated by digestive disturbances, loss of flesh, and subnormal temperature. Assimilation is not complete, elimination is less active and a partial auto-intoxication results.* The blood from its excess of waste matter irritates the kidneys. Confirmatory evidence of the correctness of this theory is found in the fact that bile, oxalic acid, uric acid, and sugar in the urine frequently cause albumen and casts.

It is probable, however, that the disturbances in the circulation of the blood play quite as important a part. Increase in the quantity of urinary excretion under the influence of the emotions is a matter of the most common observation: a full bladder after a lively activity of pleasurable emotions or of stress of mind is a frequent occurrence in healthy people, and it is also symptomatic of the abnormal emotional state of the hysteric. Nervous states may cause also a diminution or even, for short periods, suppression of the urine. The composition also may vary under psychical and nervous influences, and among other changes most authors recognize a nervous albuminaria produced, perhaps like the changes in quantity, through the vaso-motor nerves of the kidney. Cowles† has shown the dependence of worry as a mental symptom upon neurasthenic conditions, and, when this mental state is once established, whether its initial cause be physical or psychical, its counter effect through the influence of painful emotions upon the circulation and nutrition. Such well recognized effects of mental states upon the bodily functions lead to the conclusion that changes in the blood itself and in its circulation in the kidneys are the elements, themselves depending on the mental state, which may possibly explain the renal symptoms in the class of cases under consideration.

Such a cause of kidney disease is recognized by nearly all writers and emphasized by a few, but the most pass it by with brief mention. Purdy‡ speaks of mental influences as favoring the production of chronic interstitial nephritis. T. Clifford Albutt§ in a paper on "Mental Anxiety as a Cause of Granular

* See study of the relation of auto-intoxication to neurasthenic conditions and their mental symptoms, in the Shattuck Lecture for 1891, by Edward Cowles, M. D., *Boston Med. and Surg. Journ.*, Vol. 125, p. 97. See also his article on The Mechanism of Insanity, *Amer. Journ. of Insanity*, July and October, 1891.

† Loc. cit.

‡ Bright's Disease and Allied Affections of the Kidneys, p. 142, 1886.

British Med. Journ., 1877.

Kidney," gives to "mental anxiety and prolonged distress a high if not a chief place." He says it is "impossible to prove this by reading cases, and the opinion must stand or fall by the general voice." He had notes of thirty-six cases, and in twenty-four there was a marked history of mental distress, or care, or both. He gave no theory in explanation, but merely said, "concerning the connection of depressing passions with granulation of the kidney I offer no opinion."

Dickinson* gives as one of the causes of granular degeneration of the kidney "prolonged mental disturbance, anxiety or grief." "This cause of the disease," he says, "is perhaps problematical; the mode of its operation is not obvious, but must be surmised as through the nervous system. A lowering of nervous force is to be recognized as at least predisposing to every form of albuminuria. I have seen so many instances in which granular degeneration has been immediately sequent upon trouble that in the absence of other causes I am fain to conclude that mental conditions are sometimes concerned in its production."

Savage† says "Domestic trouble, so called, is one of the most far-reaching of morbid actions. The appetite is impaired, digestion fails, sleep is disturbed, respiration is no longer regular and quiet; the pulse becomes hard, the tension being high. The more the development of such conditions is watched, the more one is convinced that grave nutritional changes are going on. I am convinced, with Dr. Sutton of the London Hospital, that this condition may readily pass either into Bright's disease or insanity, and I would look upon the degree of tension in the whole body as the dangerous element to be considered."

Albumen and casts have been found so often in these cases that a long continuance of agitated melancholia without such symptoms is unusual. Whatever the cause, it evidently operates to produce a change in the kidneys, as is shown by the albuminuria lasting for months and the presence of casts—not only hyaline, but granular and epithelial as well, with œdema in some of the cases.

It is an eminently practical question whether this is merely a temporary affair from which the patient will recover if its cause

* Treatise on Albuminuria, p. 108, 1881.

† Insanity and Allied Neuroses, p. 44, 1884.

ceases to operate within a reasonable time, or whether it is the beginning of one of the forms of Bright's disease, which years afterward may result fatally. A decision of this question will take a long time and careful observation. The renal symptoms usually subside as the mental condition improves, and in a few cases it has been possible to observe their complete disappearance, but one of the earlier cases still has albumen and casts at the end of six years, though apparently well in body and mind. At this stage of my observations I am inclined to expect a recovery if the mental condition be of reasonably short duration, not giving time for a serious organic change in the kidneys. If, however, the cause operates for a long period of time the most serious consequences are to be feared. So much is said now of albuminuria in healthy people, ascribed to various causes, that perhaps there is danger of considering its presence of comparatively slight consequence. Albumen is not a normal urinary constituent and its presence for any length of time is a serious symptom. Indeed it is quite possible that some of these cases are in an early stage of Bright's disease.

If kidney disease is a common sequent to anxiety we have a most important element, which is often added to other well recognized causes, in the hurry and bustle, cares and troubles of modern life; and we certainly ought to find it in melancholia, for no real distress of mind can exceed that which accompanies and is symptomatic of this form of insanity; and, furthermore, it would be expected that Bright's disease in the later stages would be found with considerable frequency among the insane. On this last point there is no agreement among authors. Griesinger has already been quoted as against its frequent occurrence. Blandford* says "There is little to be said concerning the kidneys. In the pathology of commencing insanity they play a very unimportant part, and even after death they are not often found diseased. Acute renal disease with albuminuria and dropsy is decidedly rare among the insane."

Bucknill and Tuke† say "The kidneys are remarkably free from disease in all the forms of insanity, and the changes which give rise to albuminous urine are especially rare in them. We have only met with three instances of decided Bright's disease

*Insanity and its Treatment, p. 79, 1877.

†Op. cit., p. 594.

among the insane; and upon inquiry in other asylums we have found that the experience of others has been of a similar nature."

Sankey,* however, frequently found kidney disease in his autopsies—adhesion of the capsule in nearly one half the cases, and in a large number abundant evidences of disease, atrophy of the cortex, fatty degeneration, waxy disease and general atrophy.

Howden of the Montrose Asylum reports kidney disease in 97 out of 235 autopsies, or 41.3 per cent.

In Dr. Fisher's report of the Boston Lunatic Hospital for 1886 is to be found a most interesting tabulation of 68 autopsies made by Dr. Gannett. Some form of disease was found in the kidneys of 29 or 42.6 per cent. This excludes simple congestion or injection, atrophy, tuberculosis and cysts, and includes three cases of chronic passive congestion which would probably have caused albumen and transparent, perhaps blood casts. It will be observed that it is practically the result obtained by Howden in a larger number of cases.

By the courtesy of Dr. Rowe, Superintendent of the Boston City Hospital, there were taken from the records the results of sixty-eight consecutive autopsies, also by Dr. Gannett, and kidney disease was found in thirty-eight, or 59.9 per cent. Many of the patients in the general hospital died of acute disease with high temperature, giving a large proportion of cloudy swelling, twelve of the thirty-eight being instances of this change; while in the autopsies at the Boston Lunatic Hospital cloudy swelling was found in only two cases. Excluding the cases presenting this change, evidences of renal disease were found in 39.7 per cent. of the autopsies in the asylum, and in 38.2 per cent. in the hospital. This comparison is manifestly to the disadvantage of the asylum from this point of view, because so many cases in the general hospital are primarily treated for renal disease. In twenty autopsies by Dr. Gannett at the McLean Asylum, disease of the kidney was found in five.

An obvious criticism of these results is that the number of cases is too small to be of much value, but they would appear sufficient to prove that renal disease is much more frequent among the insane than authors have commonly thought.

*Lectures on Mental Disease, p. 241, 1884.

Conclusions :

First. Chronic nephritis is sometimes the cause of mental aberration, which may be called insanity.

Second. Long-continued anxiety may cause albumen, hyaline, granular, epithelial and blood casts in the urine, with accompanying œdema in some cases.

Third. This kidney affection may be temporary, disappearing when the cause is removed, or, the cause persisting too long, may become chronic renal disease.

Fourth. Contrary to the opinion of many observers, disease of the kidneys is quite common among the insane.

